

Section 3: Potential Strategies and Interventions

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Introduction

The District of Columbia's HIV Prevention Community Planning Committee (HPCPG) is charged with identifying the potential strategies and interventions that are most appropriate to prevent new HIV infections within the high-risk populations identified through the prioritization process. This section describes primary prevention strategies and interventions that have been used with different populations.¹

Two assumptions underlie this description of strategies for primary prevention interventions. [The Centers for Disease Control and Prevention (CDC) defines primary prevention as "halting the transmission or acquisition of HIV infection" and secondary prevention as "halting or delaying the onset of illness in an HIV infected individual."]

First, while any intervention can be delivered either by a non-peer professional or by a trained peer, available data suggest that peer-based interventions are superior for achieving behavior change.

Second, all forms of HIV prevention will be more effective if they are culturally, socially, and linguistically appropriate to the populations they are designed to serve.

Two criteria should be considered in choosing interventions:

1. Prevention interventions should be supported by sound evidence that they produce behavior change that results in a lowered risk of acquiring or transmitting HIV. (Information on the effectiveness of interventions can be found on **Page 4.24**)
2. In the absence of such evidence, prevention interventions should be supported by compelling arguments that they are likely to be successful at reducing HIV risk. These arguments should be based on behavior-change theory with a sensible rationale that appropriate and relevant behavior change could be produced. (Two articles on the use of theory in HIV prevention interventions can be found on **Pages 4.46 and 4.50**)

A Caveat

This section describes several programs and interventions that have been successful with different populations, and community-based organizations (CBOs) may be interested in adapting or adopting those programs for their own target populations. Adopting HIV/AIDS interventions that have been effective in other settings can reduce start-up time and resources.

But program adoption is not as simple as moving an intervention from one environment to another. A program designed to work with a Black population may not work with a Latino population. The program that is being adopted may have to be modified to address different cultural, linguistic and comprehension levels, as well as different communication patterns.

A critical factor for program success whenever a program is adopted is "buy-in" from the target population, which should be involved in the design and implementation of any HIV prevention intervention. In addition, any new program should be pilot-tested before it is fully implemented.

Cost Effectiveness

Information on the cost effectiveness of several interventions can be found on **Page 4.42**. But there are no cost-effectiveness studies for some interventions.

In general terms, you can compare the cost of an intervention that can prevent one or more cases of HIV infection against the cost of one case of infection. The lifetime medical cost of treating a person infected with HIV is estimated at \$119,000.² One thousand dollars spent on HIV prevention can save \$2,700, depending on the HIV prevalence in the targeted population.³

Prevention interventions targeted to high-risk populations have a greater effect on the number of HIV infections prevented. One way to assess this is to compare the number of HIV infections likely to be prevented over five years in a program that reduces risk behaviors by a modest 10%. In populations with HIV prevalences of 10%-15%, \$1 million will prevent about 100 infections. In populations with HIV prevalence of about 1%, \$1 million will prevent about 15 infections. In the large portion of the US population at very low risk, with 0.1% prevalence, about two infections would be prevented.³

Determining the Justification of an Intervention for the Target Population and Setting

HAA staff is required to decide if the intervention plans of sub-grantees provide sufficient justification of the intervention for the target population and setting (i.e., justification). Sufficient justification is provided when sub-grantee's plan clearly explains how the intervention will lead to the specified outcomes in the specific population and in the sub-grantee's specific setting. Justification is different from evidence.

Evidence supports the rationale for the proposed intervention; justification provides greater detail about how and why the intervention will result in the stated outcomes with the specified target population and in the particular setting in which the intervention is conducted (e.g., clinic, bars, prison)¹. Sub-grantees should provide descriptions of prevention theory as it applies to their programs, so that HAA can assess the justification for the proposed intervention.

Follow the Guidance and Standards in Volume 2

Organizations that are funded by the HIV/AIDS Administration (HAA) to implement HIV prevention interventions in the District must follow the guidelines in the **Guidance and Standards for HIV Prevention Interventions**, which is **Volume 2** of the HIV Prevention Plan.

That document describes the **standards** that should be applied consistently in the delivery of HIV prevention interventions. They must be followed in all cases.

The document also provides overall **guidance** in developing and implementing HIV prevention interventions. The overall **guidance** is intended to be more flexible. HAA recognizes that, depending on the client population, setting, and other factors, the guidance can and should be tailored to fit individual program needs.

HAA will evaluate the design of HIV prevention programs and interventions before they are implemented to ensure that they follow the guidance and standards for interventions.

Intervention Types

In 1999 the Centers for Disease Control and Prevention (CDC) identified the types of standardized evaluation data it needs to be accountable for in its use of federal funds and to conduct systematic analysis of HIV prevention efforts, to improve HIV prevention policies and programs. Evaluation data that are needed include the types and quality of HIV prevention interventions provided by CDC health department grantees and their sub-grantees, and by CBOs directly funded by the CDC; the characteristics of clients targeted and reached by the interventions; and the effects of interventions on client behavior and HIV transmission.

The CDC evaluation guidance and data system defines intervention as “...a specific activity (or set of related activities) intended to bring about HIV risk reduction in a particular risk population using a common method of delivering the prevention messages. An intervention has distinct process and outcome objectives and a protocol outlining the steps for implementation.” A program is an organized effort to design and implement one or more interventions to achieve a set of predetermined goals using one or more interventions.

The CDC has requested that health departments, including the HIV/AIDS Administration (HAA), provide aggregate data from their jurisdiction for each of the seven types of interventions covered by the evaluation guidance for each risk population (defined as a risk exposure category). In order to be able to comply with this request, AHA has adopted the CDC definitions of intervention types.

The seven types of interventions identified by the CDC in its guidance on evaluation are: individual-level interventions, group-level interventions, outreach, prevention case management, partner counseling and referral services, health communications/public information, and other interventions.

Detailed information on these interventions can be found in the "**Guidance and Standards for HIV Prevention Interventions**" of the DC Department of Health HIV/AIDS Administration.

Intervention Definitions Used in CDC's Evaluation Guidance Handbook (March 2002)

Intervention	Definition	Excludes
Individual-Level Intervention (ILI) or Individual Prevention Counseling	Health education and risk-reduction counseling provided to one individual at a time. ILI assists clients in making plans for individual behavior change and ongoing appraisals of their own behavior and includes skills building activities. These interventions also facilitate linkages to services in both clinic and community settings (e.g., substance abuse treatment settings) in support of behaviors and practices that prevent transmission of HIV, and they help clients make plans to obtain these services.	Outreach and prevention case management. Each intervention constitutes its own category. Also excludes HIV counseling and testing which is reported in a separate category.

Intervention	Definition	Excludes
Group-Level Intervention (GLI) or Psycho-Educational Skills-Building Workshops	Health education and risk-reduction counseling that shifts the delivery of service from the individual to groups of varying sizes. GLI uses peer and non-peer models involving a wide range of skills, information, education, and support.	Any group education that lacks a skills component (e.g., information only education such as "one-shot" presentations). These types of interventions should be included in the HC/PI category.
Outreach	HIV/AIDS educational interventions generally conducted by peer or paraprofessional educators face-to-face with high-risk individuals in the neighborhoods or other areas where they typically congregate. Outreach usually includes distribution of condoms, bleach, sexual responsibility kits, and educational materials. Includes peer opinion leader models.	Condom drop offs, materials distribution, and other outreach activities that lack face-to-face contact with a client.
Prevention Case Management (PCM)	Client-centered HIV prevention activity with the fundamental goal of promoting the adoption of HIV risk-reduction behaviors by clients with multiple, complex problems and risk-reduction needs; a hybrid of HIV risk-reduction counseling and traditional case management that provides intensive, ongoing, and individualized prevention counseling, support, and service brokerage.	One-to-one counseling that lacks ongoing and individualized prevention counseling, support, and service brokerage.
Intervention	Definition	Excludes
Partner Counseling and Referral Services (PCRS)	A systematic approach to notifying sex and needle-sharing partners of HIV-infected persons of their possible exposure to HIV so they can avoid infection or, if already infected, can prevent transmission to others. PCRS helps partners gain earlier access to individualized counseling, HIV testing, medical evaluation, treatment, and other prevention services.	HIV counseling and testing, which is reported in a separate category using the standard bubble sheets.

Intervention	Definition	Excludes
Health Communication / Public Information (HC/PI)	<p>The delivery of planned HIV/AIDS prevention messages through one or more channels to target audiences to build general support for safe behavior, support personal risk-reduction efforts, and/or inform persons at risk for infection how to obtain specific services.</p> <p><u>Electronic Media:</u> Means by which information is electronically conveyed to large groups of people; includes radio, television, public service announcements, news broadcasts, infomercials, etc., which reach a large-scale (e.g., city-, region-, or statewide) audience.</p> <p><u>Print Media:</u> These formats also reach a large-scale or nationwide audience and include any printed material, such as newspapers, magazines, pamphlets, and "environmental media" such as billboards and transportation signage.</p> <p><u>Hotline:</u> Telephone service (local or toll-free) offering up-to-date information and referral to local services (e.g., counseling/testing and support groups).</p> <p><u>Clearinghouse:</u> Interactive electronic outreach systems using telephones, mail, and the Internet/Worldwide Web to provide a responsive information service to the general public as well as high-risk populations</p> <p><u>Presentations/Lectures:</u> These are information-only activities conducted in group settings; often called "one-shot" education interventions.</p>	Group interventions with a skills-building component, which constitutes a separate intervention category.

Intervention	Definition	Excludes
Other	<p>Category to be used for those interventions that cannot be described by the definitions provided for the other six types of interventions. This category includes community-level intervention (CLI).</p> <p>CLI are interventions that seek to improve the risk conditions and behaviors in a community through a focus on the community as a whole, rather than by intervening with individuals or small groups. This is often done by attempting to alter social norms, policies, or characteristics of the environment. Examples of CLI include community mobilizations, social marketing campaigns, community-wide events, policy interventions, and structural interventions.</p>	Any intervention that can be described by one of the existing categories.

References

1. The material in this section is based on several sources: the CDC guidance – Evaluating CDC-Funded Health Department HIV Prevention programs; the CDC Evaluation Guidance Handbook: Strategies for Implementing the Evaluation Guidance for CDC-Funded HIV Prevention Programs ; the Plan for the Prevention of HIV of Orange County CA, 1996-99, by Nancy H. Corby, Ph.D., and Margaret Schneider Jamner, Ph.D., from the Center for Behavioral Research and Services, California State University, Long Beach; the 1998 District of Columbia funding application to the CDC; several Requests for Proposals issued by the Administration for HIV/AIDS; the 1997 and 2001 San Francisco HIV Prevention Plans, and the Los Angeles County HIV Prevention Plan for 1996-99.
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Population-Specific Interventions

This section contains information on interventions that have been successfully implemented or are recommended for different populations. Although this document identifies at-risk individuals by groups such as age, gender, sexual orientation and race/ethnicity, it should be clear that those factors do not place individuals at risk of infection. It is their behavior that may increase their risk, and it is these behaviors – and the causes for these behaviors – that are the intended focus of all prevention efforts.

Adolescents and Young Adults

Adolescents appear to change their behavior only if they receive repeated and consistent prevention messages; if they have the opportunity to develop the skills necessary to change their behavior; and if they have support for change from individuals and groups whom they can trust or identify with.¹

HIV prevention programs for adolescents must consider the developmental needs and abilities of this age group. Programs should focus on contextual factors that lead young people to engage in higher rates of sexual activity and lower rates of condom use, such as low self-esteem, depression, substance use, gang activity, stress of living in turbulent urban environments, or boredom/restlessness related to unemployment.²

Any program for adolescents should be interesting, fun and interactive, and involve youth in the planning and implementation. This is especially true for out-of-the-mainstream youth and youth from diverse cultures. Programs for hard-to-reach youth who are most at risk for HIV infection should be implemented in venues outside of schools, such as runaway/homeless youth shelters, shopping malls, detention facilities and recreation/community centers. Adolescents not only need correct information and practice in self-protective skills, but also easy access to condoms in order to keep themselves risk-free.²

Participants in the HPCPC-sponsored focus group recommended that more outreach workers be used throughout the community, to provide education and distribute free condoms, “especially” because most youth would not make special efforts to go to clinics for the help they need in order to prevent contracting HIV.³

The Centers for Disease Control and Prevention (CDC) recommends the implementation of a wide range of activities:⁴

School-based programs. Because risk behaviors do not exist independently - for example, a young person's ability to resist peer pressure and social influences to smoke are integrally related to the ability to say no to risky sexual activity - topics such as HIV, STDs, unintended pregnancy, tobacco, nutrition and physical activity should be integrated and ongoing for all students in kindergarten through high school. Research has clearly shown that the most effective programs are comprehensive ones that include a focus on delaying sexual behavior and provide information on how sexually active young people can protect themselves.

Community-based programs. Addressing the needs of adolescents who are most vulnerable to HIV infection, such as homeless or runaway youth, juvenile offenders, or school dropouts, is critically important. Community **outreach** programs play an important role in reaching these young people.

Sustaining prevention efforts for young gay and bisexual men. Targeted, sustained prevention efforts are urgently needed for young MSM as they come of age and initiate high-risk sexual behavior. Ongoing studies show that both HIV prevalence and risk behaviors remain high among young MSM. In a sample of young MSM ages 15-22 in 6 urban counties, researchers found that, overall, between 5% and 8% were infected with HIV. HIV prevalence was higher among young African-Americans (13%) and Hispanics (5%) compared with young white MSM (4%).

Need to address sexual and drug-related risk. Many students report using alcohol or drugs when they have sex, and 1 in 50 high school students reports having injected an illegal drug. Surveillance data from the 25 states with integrated HIV and AIDS reporting systems between January 1994 and June 1997 showed that drug injection led to 6% of HIV diagnoses reported among those aged 13-24 during that time period, with an additional 57% attributed to sexual transmission (26% heterosexual, 31% from male-to-male sex).

Role of STD treatment in comprehensive HIV prevention programs for young people. An estimated 12 million cases of STDs other than HIV are diagnosed annually in the United States, and about two-thirds (roughly 8 million) of those are among people under the age of 25. A large body of research has shown that biological factors make people who are infected with an STD more likely to become infected with HIV if exposed sexually; and HIV-infected people with STDs also are more likely to transmit HIV to their sex partners. Expanding STD treatment services is critical to reduce the consequences of these diseases and to help reduce the risks of transmitting HIV among youth.

References

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African-Americans

Not many prevention programs specific to African-Americans have been evaluated for effectiveness, but the number of programs is increasing and there are a few promising studies.¹ An intervention aimed at African-American gay and bisexual men extensively pilot tested all materials including videos that depicted only black men and addressed issues related to the men's same-sex attitudes and behaviors addressed in their own words. Clients who participated in three weekly, three-hour group sessions greatly reduced (50%) their frequency of unprotected anal intercourse, and maintained the behavior change through an 18-month follow-up.²

African-American male adolescents in Philadelphia, PA took part in an intervention to increase knowledge of AIDS and sexually transmitted diseases (STDs) and weaken problematic attitudes towards risky sexual behaviors. Educational materials included a video narrated by a black woman with a multiethnic cast and "AIDS basketball" where teams earned points for correctly answering AIDS questions. Participants reported less sexual intercourse, fewer partners, and greater use of condoms after the intervention.³

Men and women attending an STD clinic in the South Bronx, NY had access to either a video on condom use, or both the video and an interactive group session. Patients were given coupons for free condoms at a pharmacy several blocks from the clinic. Among African-American clients, condom acquisition increased substantially after the video and group session, but not after the video alone. One reason may be that the video primarily targeted behavior change among men. Also, clients who self-identified as Caribbean had lived in the US for a shorter amount of time, and the video may have been embedded in US culture. This study showed that interactive sessions combined with videos can personalize the prevention message and enhance behavior change.⁴

In the second decade of the AIDS epidemic, few studies of HIV prevention interventions specifically for African-Americans have been conducted or published.⁵ Especially lacking are studies of African-American IDUs and gay/bisexual men.⁶

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6. US Conference of Mayors. Assessing the HIV Prevention Needs of Gay and Bisexual Men of Color. 1993.

African-American Women

A 1996 study in Virginia on HIV prevention for African-American women found that AIDS information and street outreach for this population is most effective when introduced by another African-American woman. The study also found that church support, participation from key community leaders, and women living with HIV/AIDS is critical in educating this hard to reach population.¹

Preliminary results from a 1998 study on the impact of a six-session AIDS prevention intervention for low-income inner city African-American women in Illinois found "significant effects" across time for positive attitudes about condom use, knowledge of condom use, self-efficacy to stick to a decision to use condoms, and increased low-risk AIDS behavior.² It also found that culturally-specific AIDS prevention interventions based on social learning theory and taught by peer leaders are helpful in promoting attitudes and behaviors conducive to the reduction of HIV/AIDS.

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Chronically Mentally Ill

A review of literature on HIV prevention interventions for this population showed that intensive, small-group interventions that target a variety of risk-related dimensions-including knowledge, attitudes, and motivations, and behavioral and cognitive skills-can produce at least short-term reductions in high-risk sexual behavior among the severely mentally ill. The review also identified several gaps in the research literature, including the need to: (a) better tailor interventions to risk situations encountered by the mentally ill; (b) develop gender-tailored interventions; (c) examine and implement HIV prevention programs so they help persons sustain behavior change; (d) explore one-on-one counseling and community-level intervention methods; and (e) develop risk reduction interventions for already-seropositive individuals.¹

In a Milwaukee study, 27 men and 25 women were randomly assigned either to a four-session AIDS prevention program emphasizing risk education, sexual assertiveness, condom use, risk-related behavioral self-management, and problem-solving skills or to a waiting-list group, who later received the same intervention. Compared with the waiting-list control group, participants in the prevention program demonstrated significant gains in AIDS-related knowledge and intentions to change risk behaviors.²

The prevention program also significantly reduced rates of unprotected sexual intercourse and increased the use of condoms over a one-month follow-up period. A subset of participants who provided two-month follow-up data maintained some behavior change.²

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Commercial Sex Workers

The California Prostitutes' Education Project (CAL-PEP) provides condoms, STD/HIV testing, AIDS education and drug treatment referral through regular and repeated street outreach. Outreach workers are former prostitutes who are trained in AIDS prevention. The project successfully encouraged prostitutes to use condoms regularly on the job but found it difficult to influence condom use in private relationships.¹

On the Streets Mobile Unit-Options in New York City, NY runs vans that bring over 4,000 street prostitutes friendship, food, clothes, condoms, HIV/STD testing and counseling and needle exchange. They also help prostitutes get public assistance and/or drug treatment. Rates of HIV infection among clients have declined since 1989.²

The Threshold Project in Seattle, WA helps homeless youth acquire the skills necessary to live independently without sex work. Most of the clients in this program had been emotionally, physically, or sexually abused. The two-year program offered a series of progressively more independent living experiences, and in follow-up, 42% of participants remained in stable living situations without sex work.³

When free methadone maintenance was offered to heroin-addicted street prostitutes in southern California, most enrolled. After one year, personal income from prostitution and other crime was reduced 58% and income from legal sources increased 86%.⁴

Internationally, many HIV prevention efforts aimed at sex workers have addressed structural and policy considerations. In Thailand, the Ministry of Public Health began a 100% condom-use program in all sex establishments in several provinces. After the intervention in Samut Sakhon province, the number of condoms used increased from 15,000 to 50,000 a month, and STD incidence decreased from 13% to 0.3-0.5%.⁵

In Bulawayo, Zimbabwe a multiplicity of approaches reached sex workers and clients. AIDS training targeted nurses and health care professionals, as well as non-conventional audiences such as hotel and bar workers and taxi drivers. Community outreach relied on sex worker and client peer educators and provided widespread condom distribution. STD services in the city were also strengthened.⁶

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Deaf and Hearing Impaired

Efforts have been made to reach the deaf community through targeted HIV/AIDS education, but some findings indicate that D&HI individuals, many of whom are isolated from hearing communities due to linguistic and cultural distinctions, may not be completely receiving the messages. Studies show that deaf adolescents have large information gaps concerning HIV transmission and prevention.¹ A 1993 study in Colorado found important gaps in adolescents' knowledge of how HIV and AIDS are transmitted and prevented and who can get HIV.³

The particular barriers that the deaf must face in learning about HIV protection range from inadequate schooling about human sexuality to the scarcity of locally available education programs.² In Colombia, a 1996 study found that D&HI individuals do not have access to HIV prevention information in the media or educational brochures because 95% of them are illiterate. As a result of the study, the National AIDS Program is developing a mass media campaign that uses sign language to decrease the isolation and lack of communication of the D&HI.⁴

A 1998 study in Cincinnati among persons whose primary language is American Sign Language found that participants were less likely to associate sexual contact with drug users and number of sexual partners as high-risk sexual behaviors. They also believed they did not need to change their sexual behavior as a result of the AIDS epidemic. The study also found differences in receiving, trusting, and/or being exposed to current information about AIDS, consistent with the fact that they are a minority population with distinct knowledge and cultural traditions.⁵

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Gay/Bisexual Men

HIV prevention programs using small group counseling, community outreach, community mobilization, stress reduction counseling, peer education, and skills training have been effective among all segments of MSM: men in epicenter cities, men in rural communities, young men, adolescents, men of color, and bisexual men.¹

AIDS education led by peers on a community level is effective at reaching higher-risk men. In several medium-sized towns, the most popular people in social settings were trained to deliver AIDS risk-reduction messages to their friends and acquaintances in gay bars. As a result, fewer men practiced unprotected sex.²

The STOP AIDS Project, which grew out of focus groups conducted early in the epidemic in San Francisco, CA, uses community outreach and small group counseling to reduce HIV risk. About 8,000 men are reached annually and about 1,800 attend workshops. Self-reported rates of unprotected anal intercourse declined after the workshops, from 25.1% to 19.4%, with even greater differences among HIV positive men.¹

Prevention efforts should use a variety of strategies that increase resolve to survive the epidemic, including building self-esteem, strengthening ties to the community, building a future and creating a stronger identity for the community apart from the epidemic.³

Institutions within the lesbian and gay community and the larger society must recognize that combating homophobia makes a direct contribution to HIV prevention and redouble efforts to address the civil rights issues of gay and bisexual men.

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Asian & Pacific-Islander Gay/Bisexual Men

Effective HIV prevention and education programs for A&PIs can use many culturally appropriate strategies. For marginalized A&PI populations such as A&PI gay men, peer-based programs are important. Interventions that include the development of nonverbal and other more indirect communication skills also are more culturally appropriate. Outreach activities can be conducted at cultural events, bars, churches and temples, beauty parlors and massage parlors.¹

One prevention program in San Francisco, CA used culturally tailored brief group counseling to reduce HIV risk among A&PI MSM. The project fostered positive ethnic and sexual identities by addressing topics such as having dual identities, community, racism and homophobia, and practiced eroticizing and negotiating safer sex. Men who participated became more knowledgeable and more concerned about HIV infection, and reported fewer sexual partners. Chinese and Filipino men reported reductions in unprotected anal intercourse.²

Participants in the DC study identified several issues that should be included in prevention programs for gay A&PIs, including workshops on risk assessment, safer-sex negotiating skills, and self-esteem.³ The report on this study also identified a need for "culturally sensitive coming out tools and/or resources that will address the issues of being queer alongside cultural issues about being Asian or Pacific Islander."

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Latino Gay/Bisexual Men

A needs assessment conducted in the District of Columbia by Salud, a Latino CBO, found a need for prevention interventions that address the self-perception of risk, self-esteem, self-worth, relapse prevention and negotiation skills. Individuals need to have a more concrete idea of how to measure their own individual risk and what steps to take to avoid that risk. This must be carried out through comprehensive interventions that raise the issues of sexual behavior and risk individually. At the same time, the intervention must provide skills to address self-esteem and self-efficacy of participants, so they can effectively take those steps necessary to reduce their level of risk.¹

The study also found a need for innovative efforts to reach the population. The length of time and the different methods that had to be used to recruit participants for the assessment demonstrated the difficulties in reaching this population. Recruitment through fliers and newspaper advertisements was not effective in accessing the population and street outreach was only moderately successful at one location where gay and bisexual Latino men congregate. Any interventions must be grounded in and have extensive contacts within the community, and include active participation of the stakeholders in the community, in particular community activists.

Surveys respondents and most participants in a community forum also indicated most they did not know what types of resources are available to learn about HIV prevention. Although most respondents indicated that they are very concerned about HIV, they could not describe any institutional source they accessed to obtain information. They also stressed a lack of continuity in community-related activities. Several organizations that have provided programs for this community have either ceased to exist or have not continued their activities at the same level, leaving the community with a sense that they have no place to turn to for support for themselves or their friends.

Participants in the DC focus group for gay/bisexual Hispanic/Latino men identified a need for prevention information in Spanish, as well as more outreach activity in Spanish-speaking neighborhoods, and the establishment of networks and opportunities to socialize beyond bars and similar establishments.³

One finding of the Latin American Men Study is that there appears to be enough similarities among groups of different national origin to justify a common HIV-prevention strategy for Hispanic/Latino MSM. Issues such as language dominance, immigration status, and unemployment are likely to be more relevant to the design of a prevention program than the national ancestries of various Latino MSM.²

New York City's Empowerment program for Hispanic/Latino MSM provides eight sessions that focus on critical experiences likely to have occurred to this population, eliciting personal associations, promoting critical analysis about the consequences that such experiences had in the life of the participants, and discussing their feelings of disempowerment. This is followed by a period of collective problem solving to find alternative, more empowering ways to deal with everyday demands, including safer sex behavior. The process is facilitated, but not prescribed, by an activist or educator.¹

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Young Gay and Bisexual Men

Since there are multiple factors that contribute to HIV risk-taking among young gay men, multi-level prevention programs are necessary - programs that impact variables at individual, interpersonal and social system levels. New young men will come out each year who have not been exposed to prevention campaigns of previous years, thus HIV prevention for young gay men must be ongoing and dynamic.¹

Engaging, creative programs are needed that address HIV prevention within the contexts of young gay men's lives, incorporating issues of self-esteem, coming out, substance use and interpersonal and social needs. Community-level and peer outreach programs are especially promising, and services for young gay men of color are particularly needed. Since previous sexual history is a strong predictor of current risk-taking behavior, intervention at an early point in a young man's sexual initiation will be maximally effective.²

The involvement of community and opinion leaders in prevention efforts will be critical to overcome cultural barriers to prevention, including homophobia,⁶ which may discourage young gay men from accessing prevention services.¹ For example, there remains a tremendous stigma to acknowledging gay and bisexual activity in African-American and Hispanic communities.²

A study done in California found that, "to be effective, HIV prevention programs must respect the complex, multi-determined nature of sex for young gay men and understand their personal meanings of sex." Seventy two percent of the participants in the study felt they engaged in sex with other men because of the physical pleasures of sex, but the interpersonal roles of sex were also important. They used sex as a way to express affection (46%) and as a relationship-building tool (33%), i.e., to get to know someone, make friends or test the potential for a relationship. Sex also served important psychological functions, i.e., alleviating loneliness (25%), boosting self-esteem/validating one's desirability (23%).³

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Heterosexual Men

Focusing HIV prevention efforts on heterosexual male sexual behavior can make a difference in the epidemic among men, their female partners and their offspring. Interventions for heterosexual men can use multiple components, including:

Counseling both men and women. A study of discordant heterosexual couples (where one is HIV-infected and the other is not) found that counseling men and women together increased consistent use of condoms. Of the 124 couples that did use condoms consistently for vaginal and anal intercourse, none of the negative partners became infected, despite a total of about 15,000 episodes of intercourse.¹

Helping men rethink notions of intimacy. Programs can address different male beliefs, and use consciousness raising to address the notion of gender roles and coercive behaviors in men, as well as help men embrace an idea of intimacy that can work in conjunction with HIV prevention. Skills building to increase sexual impulse control can also help men deal with violence and coercion, as well as help reduce number of partners.²

Heterosexual male peer education. In addition to couples counseling, programs should provide counseling for and by men alone. Research has found that men are interested in family planning, but may not want to discuss it only with their wives or partners. Peer educators can teach and model effective preventive behaviors in settings where men may gather, such as gyms, barbershops or sporting events.³

Helping men communicate with women. Like many people in relationships, heterosexual men may find it difficult to talk about sex and love with their partners. One study of young African-American men, for example, demonstrated that regarding sex, men often say what they think their partner wants to hear.⁴ Programs that help increase communication skills can be effective.

Focus on men who have sex with men and women (MSMW). A survey of MSMW found that 54% of their female partners did not know about their homosexual activity, and 65% of the men had engaged in unprotected sex with their female partners.⁵ Helping MSMW with communication and disclosure skills, as well as skills for correct and consistent condom use, can be beneficial.

Condom social marketing. In Zaire, careful consumer research produced "Prudence," a condom designed and priced to be culturally sensitive, attractive and affordable. Total sales of Prudence increased 443% from 1988 to 1989, and in many regions of Zaire, the word Prudence has become a generic substitute for the word condom.⁶

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Hispanics / Latinos

For HIV prevention to make a difference, Latinos must attempt to break the silence about sexuality in their communities, address homophobia, and address specific cultural aspects that may be detrimental to healthy sexuality, such as not allowing power for women, and encouraging men to prove their masculinity through intercourse.¹

Few prevention programs addressing Latinos have been evaluated, and effective behavior change models are still being developed. However, promising programs incorporate extensive preliminary work in targeted Latino populations,² use Latino peer educators, stress empowerment and self-esteem

building, and expand beyond issues of HIV to incorporate broader issues of relationships, family, and culture.

Porque Sí, an AIDS education video developed for and tested by Latinos, was used at an STD clinic in the South Bronx, NY. Some clients at the clinic were offered the video, or video and interactive group session, as well as coupons for free condoms. Latino clients who saw the video and participated in group sessions were almost twice as likely to redeem coupons as clients who did neither.³

Hermanos de Luna y Sol, an ongoing intervention for Latino gay/bisexual men in San Francisco, CA, attracts clients by appealing to brotherhood and the family of gay men. The first group session deals with the common history of oppression among Latino gay men, including issues of homophobia, machismo, sexual abuse, racism and separation from family and culture. AIDS and sexuality are then discussed in the second session.⁴

An AIDS prevention program for Latino youth in Boston, MA, used Latino peer leaders to help teens reduce unprotected sex. They held workshops in schools, community organizations, health centers and in teens' homes, and distributed kits with condoms and instructions. The program did not increase sexual activity for the teens; males were less likely to start sexual activity and females less likely to have multiple partners.⁵

Programs for heterosexual couples should target both partners, and women should receive routine prenatal HIV counseling and voluntary testing. Prevention programs need to address these populations with Latino-only studies. Many studies include multi-ethnic populations, making it hard to identify Latino-specific findings.²

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Hispanic/Latina Women

The authors recommend that HIV prevention interventions to increase condom in this population include consciousness raising designed to address gender role beliefs and coercive behaviors in men, promote equal decision-making, and provide skills building to increase men's sexual impulse control and self-efficacy to use condoms. Prevention programs should also encourage Hispanic/Latina women to carry condoms more, since carrying condoms is a strong predictor of condom use, and to be more skeptical of new partners.¹

Participants in a DC focus group with Hispanic/Latina women, held in August 1998, felt cultural characteristics in the Hispanic/Latino community may be barriers to safe sex practices and the dissemination of prevention information. They said machismo may cause many in the community to

continue to have sex without a condom, and some wives may be naive of the fact that their husbands are having sex with others and see no reason to use condoms in their marital relations. Some of the older women felt that there is much fear of HIV/AIDS based on a Hispanic/Latino cultural focus on the morbid, which inhibits open discussion of the disease and fosters misinformation.²

The most significant problem cited by participants in a DC focus group was the lack of information and resources in Spanish. While the young women in the group (with better English skills) felt that there was a good deal of prevention information available and that people just were not paying attention, the older participants said that the information may be available but it does not reach everyone because it is not in Spanish. The need for more prevention services and information in Spanish was voiced several times by group members.

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Homeless

"Sex, Games and Videotapes" is a program for homeless mentally ill men in a New York City, NY shelter that is built around activities central to shelter life: competitive games, storytelling, and watching videos. For many of these men sex is conducted in public spaces, revolves around drug use, and must be conducted quickly. One component of the program is a competition to see which man can put a condom on a banana fastest (without tearing the condom)-this teaches important skills for using a condom quickly. The program allows for sex issues to be brought up in a non-judgmental way. This program reduced sexual risk behavior threefold.¹

In San Francisco, CA, HIV tests were offered to homeless people at shelters, food lines and parks, and HIV+ people were given referrals to early intervention.² Another testing program was linked to specialized case management to help respond to multiple clients' needs such as access to primary care, substance abuse treatment, and mental health services. Case managers were able to maintain contact and build relationships with drug using clients, many of whom were HIV+ or mentally ill.³

A pilot program for homeless women in New York City, NY, some of whom engage in survival sex and are victims of rape and abuse, provides methods of protection women can use in the most difficult circumstances. The women are given Advantage 24 (a time-release Nonoxynol-9 gel) and female condoms, and then learn to use these on a regular basis. As methods they can control, these provide a base for empowerment.⁴

The Teen Peer Outreach-Street Work Project in San Diego, CA, trained teen peer educators to provide HIV prevention education and case management to homeless youth. Food, clothes and shelter information were provided, as well as HIV educational messages. The project found a need for, and subsequently worked to develop, educational materials for homeless youth with low literacy levels.⁵

A successful program for homeless and drug addicted Latina women in Los Angeles, CA, found little difference between women who attended a traditional AIDS education program, and a longer, culturally sensitive program that emphasized problem solving, risk reduction and self-esteem. Shorter, generalized programs may be adequate for addressing more basic needs of impoverished populations.⁶

Nontraditional programs are needed that engage homeless populations at every place they access basic services, such as soup kitchens, shelters, hotels, and clinics. Staff who works in these settings should be trained in HIV prevention education.⁶

Group interventions that have worked in certain settings need to be disseminated and replicated in various institutions. Prevention services must have realistic expectations for change, and must give homeless people concrete goals that they can accomplish. It is difficult to conduct HIV prevention without tackling the bigger issue of homelessness.⁶

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Incarcerated

At the only prison facility in the state of Rhode Island, a comprehensive program addresses needs of prisoners while incarcerated and follow-up after their release. The program involves HIV education in prison, HIV testing and counseling, medical care for HIV-infected prisoners, and pre-release counseling and post-release monitoring of HIV-infected individuals. Pre-release counseling included medical care, drug abuse, housing, and financial support needs of prisoners. One year after release, 73% of HIV-infected inmates were receiving follow-up medical care.¹

A community follow-up intervention targeted incarcerated youth aged 13-19 in the District of Columbia. The program reinforced risk-reduction behaviors by providing adult mentoring, peer support, and access to health care services.²

Weekly HIV/AIDS education and support groups were set up for female inmates at a facility in New York City, NY. The groups were facilitated by a community-based organization, and focused on communicating with family members and close contacts about risk behaviors, locating medical care, and other HIV-related information.²

Men at a large state prison in California can take part in a comprehensive intervention program that includes: HIV-positive inmate peer education, pre-HIV test counseling, health promotion for HIV-positive inmates, pre-release educational booster session, discharge planning and community follow-up. The success of these programs involves ongoing support and input from inmates, guards and correctional officers, prison counselors, educators, administrators and the prison medical team.³

Ongoing training and education for prison staff (guards, nurses, doctors) is key for ensuring that programs are consistent and sustainable within institutions.⁴

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Injection Drug Users and Substance Abusers

The goals of HIV prevention and substance treatment are often conflicting. Many treatment programs focus on stopping substance abuse altogether, and 12 Step programs often advocate sexual abstinence while in recovery. On the other hand, many prevention programs focus on safer sex and harm reduction, acknowledging that relapse could occur. These conflicting cultures may make it difficult to integrate HIV prevention interventions into substance abuse programs.¹

New Leaf (formerly 18th Street Services) in San Francisco, CA, provides substance abuse treatment for gay/bisexual men, and offers a safer sex intervention. Although evaluation of the intervention showed little difference between men who participated in the safer sex program, and men who only went through treatment, both groups showed significant reductions in sexual risk.² Getting and retaining substance abusers in treatment is an effective preventive method; adding a safer sex program may also help.

Some prevention efforts teach safer sex behaviors regardless of drug use. In "Sex, Games, and Videotapes," a program for homeless mentally ill men in New York City, NY, the men suggested taping condoms to their crack pipes as a reminder for sexual encounters that are often quick and public. They also compete to see which man can put a condom on a banana fastest (without tearing the condom), which teaches important skills for using a condom quickly. The program allows for sex issues to be brought up in a non-judgmental way, and reduced sexual risk behavior threefold.³

Many substance abusers receive treatment only after they have been arrested and are offered treatment as an alternative to jail or prison, or while they are incarcerated. The Delaware correctional system has instituted a therapeutic community (TC) treatment program in prison and a transitional TC outside the prison for parolees. The drug-free residential program includes rehabilitation, peer education group counseling and social services. Participants in the TC program had lower rates of drug relapse and re-arrest than non-participants, and reported reduced HIV risk behaviors.⁴

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Seniors

Cultural and generational issues need to be considered in crafting HIV prevention efforts. Older persons may not be comfortable disclosing their sexual behaviors or drug use to others. This can make it difficult to find older adults who attend support groups.¹

Few prevention programs exist that target adults over 50. Most programs for older adults offer support for HIV+ persons, or target clinicians and caregivers of older adults. Promising prevention programs incorporate generational concerns, target high-risk groups such as older gay men and older women (especially recent widows), and involve older adults in their design and as peer educators.²

Senior HIV Intervention Project (SHIP) in Florida's Dade, Broward and Palm Beach Counties, trains older peer educators to present educational and safer sex seminars at retirement communities. Trained AIDS educators meet with health care professionals and aging services workers to help them understand the risk posed to seniors by HIV. ³

In six regional senior centers in Chicago, IL, a program used peer-led "study circles" to increase HIV awareness and knowledge. Participants viewed a video, "The Forgotten Tenth," and did their own research as to how HIV affects their lives physically, politically and economically. They then shared their knowledge at the next meetings. After the program many participants became AIDS educators. ⁴

An HIV education program for older adults was conducted at meal sites in Florida. Based on the Health Belief Model, the program included facts and statistics on older persons and HIV, condom use instruction, HIV testing information, and case studies of older persons with AIDS. After the session, participants reported a significant increase in knowledge about AIDS and perceived susceptibility to HIV. ⁵

Clinicians and service providers for older adults, including caretakers and nursing home staff, need to be educated on HIV risk behaviors and symptoms of HIV infection among older adults. Clinicians need to conduct thorough sex and drug use risk assessments with their patients over 50, and challenge any assumptions that older people do not engage in these activities or will not discuss them. ²

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Transgendered

The San Francisco Transgendered Advisory Committee made two major recommendations to improve prevention services for this community ¹, including:

- Hiring and training MTF and FTM transgendered individuals as support group facilitators, client advocates, substance abuse counselors, media campaign coordinators, case managers and outreach workers could facilitate access to services for the transgendered community. Employing transgendered staff would also provide jobs to a community that has suffered severe employment discrimination.
- Transgendered sensitivity training for service providers. A training unit responsible for developing and implementing in-service trainings should be formed to ensure that systematic training of all service providers takes place on an ongoing basis.

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Women

Recruiting women as community leaders was the basis for an effective HIV prevention program among low-income urban women living in housing developments. Women opinion leaders were trained to lead

risk reduction workshops, provide HIV educational materials and condoms, and conduct HIV education through community events. The women effectively mobilized their residential community through tailored prevention messages and activities. ¹

Because women at risk are not always visible as a specific population or community, programs must strive to be where women are. A program provided HIV prevention services for women visiting their incarcerated male partners at San Quentin State Prison. The program, based at the visitor's center, trains women visitors as HIV educators, and the educators provide group and individual peer education. The program is low cost and has been well accepted by visitors and by the prison. ²

Interventions that promote HIV counseling and testing for both members of a couple should be considered. The California Partner Study provided couple counseling in combination with social support to serodiscordant heterosexual couples (where one partner is HIV positive and the other HIV negative). As a result, condom use increased and no new HIV infections were reported among the couples. ²

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Pregnant Women (Pediatric)

The District of Columbia's Comprehensive HIV Intervention and Prevention Services (CHIPS) for Families project, of the Office of Maternal and Child Health, developed a "Policy Initiative to Reduce Perinatal Transmission of HIV" that encapsulates the recommendations of the federal Health Resources and Services Administration. In 1996, the agency developed a counseling and testing protocol for pregnant women, which has been distributed to health care workers.

The document states: "All health care providers that provide care to pregnant women and women of childbearing age should provide routine HIV counseling and offer voluntary testing on-site or by referral... provide to all pregnant women with HIV infection clear information on the risks and benefits of treatment for herself and her infant... (and) make available medical treatments intended to reduce perinatal HIV transmission in accordance with current Public Health Service (PHS) recommendation either on-site or by referral."

Perinatal transmission cannot be prevented if a woman is unaware that she is HIV+. In the U.S. many women first find out they are HIV+ during prenatal screening, or once their child is born and tests positive for HIV. Access to voluntary HIV testing and counseling using trained peer counselors must be made available for all women to help them make informed choices. ¹

Treating HIV+ pregnant women with AZT during pregnancy and delivery, and treating the infant with AZT after birth, has been shown to cut rates of perinatal transmission by two-thirds, from 25.5% to 8.3%. ⁴ However, some women may choose not to use AZT, may have problems adhering to the regimen, or may not be able to afford or access the drugs. ²

At the Bay Area Perinatal AIDS Center (BAPAC) at San Francisco General Hospital, in San Francisco, CA, HIV+ mothers receive antiretroviral therapy and further treatment/control of maternal HIV disease, and babies are given AZT for six weeks following birth. None of the 71 HIV+ mothers transmitted HIV to their infants and none of the mothers breastfed. ³

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Effectiveness of HIV Prevention Interventions

Effective HIV prevention interventions reduce or eliminate the transmission of HIV by averting or reducing HIV-related risk behaviors. The biggest barrier to knowing which interventions are most effective at preventing the spread of HIV is that few interventions have been evaluated formally. And of those that have, many of the evaluations have not been rigorous enough to provide highly reliable information.

This section, and the CDC's "Compendium of HIV Prevention Interventions with Evidence of Effectiveness" (Page 4.60), provides information on the effectiveness of different prevention interventions. A table on **Page 4.33** lists the interventions that have been found to be effective and the studies that have been done to evaluate their effectiveness.

Effectiveness of Individual Level Interventions: Counseling

Although HIV antibody testing should be delivered in the context of counseling (21), counseling is not always delivered in the context of testing. Sometimes stand-alone counseling interventions have been used as comparative conditions to counseling and testing (22). Several studies have evaluated one-on-one or small group, risk-reduction counseling interventions completely unlinked to HIV antibody testing. Many of these studies were randomized, controlled trials examining behavioral outcomes (1-20). The preponderance of evidence from these trials suggests that behavioral interventions decreased risky drug- or sex-related activities (1-3,5,6,8,9,11-13, 15-19).

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Effectiveness of Counseling and Testing

A review of the relevant research prior to 1991 (Higgins et al, 1991) found that counseling and testing tended to reduce HIV-related risk behaviors in specific populations - especially among heterosexual couples discordant in HIV serostatus and among gay men testing HIV positive. Overall, however, little evidence supports the notion that HIV antibody counseling and testing for HIV seronegative people lead to favorable behavior changes.

"For persons testing HIV negative, behavioral science theory and research suggest the need to strengthen the duration and intensity of counseling and other preventive services . . ." (Holtgrave, 1993).

It has been suggested, therefore, that counseling and testing efforts should not necessarily be the center of HIV prevention efforts and that the effect is stronger when counseling, testing, referral, and partner notification (CTRPN) is embedded in a long-term prevention program (Coates & Stryker, 1991).

In a review of literature on prevention programs, Choi and Coates (1994) said: "HIV counseling and testing have a place in HIV risk reduction, but are not sufficient for HIV reduction. HIV counseling and testing do have impact on certain behaviors in certain populations. For example, HIV counseling and testing is associated with lowering sexual risk behavior among homosexual men and injection drug use among IDUs. HIV counseling and testing with couples is associated with reductions in transmission among serodiscordant couples. However, HIV counseling and testing has not had an impact on pregnancy decisions among seropositive women. Only modest effects were demonstrated with STD clinic patrons."

CTRPN programs, which include counseling designed to change HIV-related risk behaviors, have probably undergone more evaluation than any other HIV prevention program. Higgins and colleagues¹ reviewed the literature on behavioral consequences of HIV antibody counseling and testing. They found that counseling and testing tended to reduce HIV-related risk behaviors in specific populations-especially among heterosexual couples discordant in HIV serostatus and (though slightly less obvious from the data) gay men testing HIV seropositive. For instance, researchers in four studies of discordant, heterosexual

couples reported substantial increases in their consistent use of condoms after HIV antibody counseling and testing ¹.

Research on persons learning their HIV seronegativity in the context of counseling and testing has yielded mixed results (1-8). Several studies found either little or no effect on high-risk behaviors for those aware of their own serostatus and in counseling (1,2,4,5), or a higher risk for those learning their seronegativity than those unaware or untested (1,3,7). One study found some risk reductions ⁶. Overall, little evidence supports the notion that HIV antibody counseling and testing for HIV seronegative persons (as implemented in these studies) lead to favorable behavior changes ⁸. The preponderance of evidence, however, shows the experience is not harmful for them either. For persons testing HIV seronegative, behavioral science theory and research suggest the need to strengthen the duration and intensity of counseling and other preventive services tailored to client-specific needs and the quality and suitability of delivering both counseling and testing services (9,10).

For the partners of HIV-infected persons, one basic benefit comes from being informed that they are at risk. This will be particularly helpful information for those who do not even suspect that they might have been exposed. Once informed, the partner can decide to access available HIV prevention counseling and testing services. If not infected with HIV, partners can be assisted in changing their risk behavior, thus reducing the likelihood of acquiring the virus. Or, if already HIV-infected, the partner's prognosis can be improved through earlier diagnosis and treatment.

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Effectiveness of Group-level Interventions

Group-level interventions have been effective in promoting safer sex behavior among gay and bisexual men (Choi & Coates, 1994). This approach has been shown to have an impact on motivation, attitudes, and behavior. It should be noted, however, that research has primarily examined the effect of group

interventions among predominately white, college educated, and self-identified older gay men. Whether this approach would have a similar influence among members of other ethnic groups, non-gay-identified men who have sex with men (MSM), or younger MSM remains to be demonstrated.

For injection drug users in treatment, participants in an enhanced six session intervention on HIV education showed better ability to make decisions about risky behavior immediately following the intervention than participants in single session information sessions. However, follow up data did not reflect significant differences in behavior between the two groups (McCusker et al., 1992.)

A review of research sponsored by the National Institute of Mental Health found that participants in a multiple session intervention with the mentally ill, while showing success in increased knowledge and intention to use condoms immediately following the intervention, were not able to sustain those changes.

Multiple sessions have a greater possibility of effecting consistent behavior changes than one-time interventions. A study of African-American gay and bisexual men in San Francisco demonstrated that men who participated in multiple session groups had higher levels of behavior change, and maintained behavior change over time more successfully than those who attended single session groups (Peterson, 1993).

Kirby and colleagues (1994) summarized studies evaluating specific school-based programs. Three categories of programs were assessed: programs promoting abstinence, programs including both abstinence and contraception, and education plus reproductive health services. Regarding the first category, the authors conclude that, "There is not sufficient evidence to determine if school-based programs that focus only upon abstinence delay the onset of intercourse or affect other sexual contraceptive behaviors" (p. 352). In reviewing the data on the second category of programs, the authors point out that "these data strongly support the conclusion that sexuality and AIDS education curriculums [sic] that include discussions of contraception in combination with other topics-such as resistance skills-do not hasten the onset of intercourse. They also demonstrate that some, but not all, programs can delay the initiation of sex" (p. 353). Furthermore, some, but not all, of the programs evaluated increased contraceptive use among the students. In summarizing the data concerning school-based programs providing reproductive health services either on campus or nearby, Kirby and colleagues found that these programs neither hasten the onset of intercourse nor increase the frequency. Although the effect on contraceptive use was not clear due to inconsistent findings, the data were "consistent with the hypothesis that the presence of a strong educational component is more critical than provision of reproductive health services" (p. 356).

Effectiveness of Hotlines

Hotlines may be especially utilized by persons who are geographically isolated or who are too self-conscious to seek information in person. Typically, HIV/AIDS hotlines provide informational services rather than skilled crisis services. While the brief contacts that usually characterize hotlines are probably not enough to promote behavior change, they can be effective as sources of referral to testing and other HIV services. In addition, by providing access to valid HIV/AIDS information, hotlines may be useful for reducing anxiety about AIDS among the general public.¹¹

References:

1. Nancy H. Corby, Ph.D., and Margaret Schneider Jamner, Ph.D., Plan for the Prevention of HIV in Orange County CA, 1996-99.

Effectiveness of Outreach

Street Outreach has been quite effective in reaching at-risk individuals who may otherwise be unlikely to access HIV prevention services and education, and can provide repeated exposures to HIV information. The interventions are most productive when the outreach workers are peer educators who have similar backgrounds as the target population. Evidence for the success of outreach comes mainly from the results

of the National AIDS Demonstration Research Program (NADR) and suggests that this strategy effectively reduces unsafe needle practices among IDUs and, to a lesser degree, increases consistent condom use (Stephens et al., 1993).

Outreach promoting safer sex among gay men has been found to bring about short-term behavior change (e.g., in frequency of high-risk sexual behaviors); long-term impact has yet to be established (Choi & Coates, 1994). Street outreach programs have also targeted commercial sex workers with some success. Evaluations of these programs have been conducted in developing countries and have found that consistent condom use with clients increased among sex workers in Nigeria, Zimbabwe, and Ghana (cf. Choi & Coates, 1994). Street outreach may have the greatest impact on sex- and drug-related behavior when delivered by trained peers and when accompanied by the provision of appropriate preventive material, such as condoms and bleaching kits.

Through a variety of information, education, and counseling sessions, HIV prevention programs have attempted to get IDUs to stop using and injecting drugs, stop using unclean needles and syringes, and stop engaging in high-risk sexual behaviors (1-9, 13). Whether offered early or late in the treatment process or as standard (short, one-time) or enhanced (longer, multiple) versions, these sessions generally reduced IDUs' risky drug behaviors (especially those needle-related). Their impact on modifying sex-related risk behaviors such as casual partners or exchanging sex for drugs or money was less obvious and requires further study (2-13).

The NADR Project assessed longitudinal data from 28 sites delivering street outreach services to a total of 13,475 IDUs and 1,637 sex partners of IDUs¹⁰. Study participants were randomly assigned to standard or enhanced AIDS education and counseling sessions. At the 6-month follow-up, a clinically meaningful and statistically significant reduction was found for the following high-risk behaviors of IDUs for both intervention assignments: frequency of injecting drugs, use of non-injected drugs, use of borrowed injection equipment, and number of sex partners. Twenty-eight percent fewer of the total IDU sample reported injecting daily at follow-up than at baseline (42 percent versus 70 percent). Twenty-four percent fewer reported borrowing needles at follow-up than at baseline (24 percent versus 48 percent) and 8 percent fewer reported having two or more sex partners during the preceding 6 months (36 percent versus 44 percent).

Furthermore, favorable behavior changes were found for use of new needles, bleach to clean injection equipment between uses, and condoms. Among the 13,475 IDUs, 21 percent more reported always using new needles at follow-up than at baseline (40 percent versus 19 percent), and 9 percent more reported always using condoms (19 percent versus 10 percent). Several factors contributed to the favorable impact of street outreach services, including using outreach workers from the community (often ex-addicts), providing bleach and condoms and demonstrating their correct use, and offering training in sexual negotiation and refusal skills¹⁴.

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Effectiveness of Needle Exchange

The number of studies showing beneficial effects on behaviors such as needle sharing greatly outnumber those showing no effects. Needle exchange programs (NEPs) have been implemented successfully in a number of communities that have sanctioned this strategy. Available information indicates that NEPs effectively reduce the frequency of sharing needles and syringes and may improve needle hygiene, such as using bleach to clean needles (Lurie et al, 1993). Studies show reduction in risk behavior as high as 80 percent in injecting drug users, with estimates of a 30 percent or greater reduction of HIV. The impact on sexual behavior is less clear, although it appears that there is no increase in risky sexual behavior associated with NEPs. The cost of such programs is relatively low.

Effectiveness of Prevention Case Management

As summarized in a recent report (Holtgrave et al, 1994), "Several studies evaluated one-on-one . . . risk-reduction counseling interventions unlinked to HIV antibody testing. The preponderance of evidence from these trials suggests that behavioral interventions decreased risky drug- or sex-related activities." The effect of individual-level counseling may be limited, however, by the degree to which the intervention is culturally and linguistically appropriate, by the intensity and duration of the intervention, and by the number of contacts. According to Holtgrave and colleagues (1994), "long-term behavior change with one-time HIV prevention interventions should not be expected." Thus, individual-level counseling may be most effective when delivered by trained peers over multiple occasions.

There are many reasons to believe that Prevention Case Management can act as an effective strategy in prevention HIV infection. PCM is able to assist an individual to address all of the potential risk factors that can lead to unsafe behavior. In addition, personal efficacy – which can be built through PCM – is one of the strongest predictors of low sexual risk-taking.

Effectiveness of Partner Counseling and Referral Services

The role of PCRS, earlier diagnosis, and prevention and treatment services might have prevention benefits at the community level in reducing future rates of HIV transmission. Evidence is accumulating that antiretroviral therapy reduces the amount of HIV in genital secretions and fluids and thus might reduce the infectivity of HIV (Gupta P, *et al.*, 1997; Vernazza PL, *et al.*, 1997; Vernazza PL, *et al.*, 1997; Musicco M, *et al.*, 1994).

However, concern may be well justified that some might misinterpret antiretroviral therapy as a cure for HIV and thus be less concerned about adopting safe behaviors or exposing others (Kalichman SC, *et al.*, 1998; Kelly JA, *et al.*, 1998; Remien RH, *et al.*, 1998; Remien RH, *et al.*, 1998). Efforts to link HIV-infected persons to treatment must also continue to emphasize safe behavior during the course of treatment. Effective PCRS also can improve disease surveillance, identify social sexual networks at high risk that can then be targeted for prevention (Fenton and Peterman, 1997), and potentially assist a comprehensive program in lowering the transmission rate of HIV. In addition, PCRS can benefit service providers in the community by increasing their access to individuals in need of their services, especially people who would not come to them on their own.

Effectiveness of Health Communications/ Public Information

Publicly funded information dissemination programs have led to an overall increase in basic HIV knowledge in the general population (1-6). Most striking is data from the National Health Interview Survey (NHIS), a probability sample of the United States population, which showed that basic knowledge of modes of HIV transmission increased greatly over the last several years (5,6). For example, among 42,726 adults queried for the 1991 NHIS, 95% responded "true" to the statement, "Any person with the AIDS virus can pass it on to someone else through sexual intercourse;" and 94% responded "true" to "A pregnant woman who has the AIDS virus can give it to her baby" ⁵.

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Effectiveness of Social Marketing

Social marketing has been used more extensively outside the United States than domestically to promote HIV prevention. Evaluations of media campaigns in Switzerland and France demonstrate that "media programs, effectively designed and executed, can change behavior significantly" (Coates & Stryker,

1994). In California, the use of fotonovelas and radionovelas to disseminate AIDS information to Spanish-speaking migrant farm workers has been successful in changing knowledge, attitudes, and use of condoms among prostitutes (Conner, 1992). The Centers for Disease Control and Prevention's AIDS Community Demonstration Projects developed small media pieces distributed via peer volunteer networks to injecting drug users and their female sex partners, non-gay-identified men who have sex with men, female sex workers, and high-risk youth (youth not at home and not at school). Findings show that the intervention was successful in accessing members of these hard-to-reach populations. Moreover, the data suggest that compared to those not exposed to the intervention, those who were exposed tended to use bleach more consistently for cleaning injection equipment and condoms more consistently during sexual intercourse (Jamner, Corby, & Wolitski, in press).

A key element to social marketing is the two-way flow of communication between the producer of educational materials or programs and the intended consumer. Formative evaluation, a process by which products or messages are developed in cooperation with members of the target population and pre-tested before being distributed on a wide scale, is an essential component of social marketing. This approach ensures that the intervention will be culturally appropriate for the target population.

Several programs described under street outreach fit into the definition of a community intervention due to the involvement of community members in development and delivery of the intervention (i.e., peer educators or indigenous outreach workers). Thus, the National AIDS Demonstration Research Project (NADR) represented a community-focused intervention that featured street outreach as a primary strategy for reaching the target community. Similarly, programs that have employed members of the gay population to act as volunteer educators to members of their social group also represent community interventions relying mostly on outreach. As previously discussed, these programs have been successful in bringing about behavior change in the direction of HIV risk reduction.

Effectiveness of Other Interventions

Community-level interventions. Kelly and coworkers (1,2) pointed to community-level interventions as promising for changing HIV-related risk behaviors. Community-level interventions are those that (a) target the community (often defined by sex, geography, risky behaviors, race-ethnicity, or sexual orientation) rather than a specific individual; (b) involve community members in the actual design and delivery of the intervention; and (c) aim to change community norms about high-risk behaviors (as well as modify individual behaviors).

Kelly and colleagues recruited opinion leaders from communities of gay men, trained them in HIV prevention messages and message delivery, and asked them to take these messages back to their communities. Carefully executed, controlled studies showed that this intervention changed community norms and self-reported, risky sexual behaviors (1-4).

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Community Mobilization: Although few attempts have been made to systematically evaluate community mobilization as an approach to HIV/AIDS prevention, it is clear that it can play a critical role in facilitating HIV prevention programs.¹ Many of the intervention strategies cited above depend upon community support for implementation. Specifically, community outreach, needle exchange, and school-based HIV education all require cooperation from community members and institutions in order to be carried out effectively. Thus, although funds are not allocated to support community mobilization, this strategy could be portrayed as essential to the success of virtually all HIV/AIDS prevention programs.

References:

1. Plan for the Prevention of HIV in Orange County CA, 1996-99, by Nancy H. Corby, Ph.D., and Margaret Schneider Jamner, Ph.D., from the Center for Behavioral Research and Services, California State University, Long Beach.

Venue-based outreach: There is little information on the impact of venue-based outreach interventions, but such activities should increase HIV knowledge, clear up misinformation, and contribute to the development of a social norm favoring risk reduction behaviors.¹

References:

1. Plan for the Prevention of HIV in Orange County CA, 1996-99, by Nancy H. Corby, Ph.D., and Margaret Schneider Jamner, Ph.D., from the Center for Behavioral Research and Services, California State University, Long Beach.

HIV Prevention Interventions that have worked for At-Risk Populations

IDUs	Source of Information
Group-level interventions	<ul style="list-style-type: none"> Susser E, Valencia E, Torres J. Sex, games and videotapes: an HIV-prevention intervention for men who are homeless and mentally ill. <i>Psychosocial Rehabilitation Journal</i>. 1994;17:31-40. Martin SS, Butzin CA, Inciardi JA. Assessment of a multistage therapeutic community for drug-involved offenders. <i>Journal of Psychoactive Drugs</i>. 1995;27:109-116. Des Jarlais, D.C., Casriel, C., Friedman, S.R., & Rosenblum, A. (1992). Compendium* P. 4.43 El-Bassel, N. & Schilling, R.F. (1992). Compendium* P. 4.44 Magura, S., Kang, S., & Shapiro, J.L. (1994). Compendium* P. 4.45 McCusker, J., Stoddard, A.M., Zapka, J.G., Morrison, C.S., et al. (1992). Compendium* P. 4.46
Outreach (including needle exchange programs)	<ul style="list-style-type: none"> Interventions to Prevent HIV Risk Behaviors, National Institutes of Health, Consensus Development Statement, February 11-13, 1997 The Effectiveness Of AIDS Prevention Efforts, Congressional Office of Technology Assistance CDC AIDS Community Demonstration Projects Research Group (1999) Compendium* P. 4.41
MSM	Source of Information
Group-level interventions	<ul style="list-style-type: none"> Interventions to Prevent HIV Risk Behaviors, National Institutes of Health, Consensus Development Statement, February 11-13, 1997 The Effectiveness Of AIDS Prevention Efforts, Congressional Office of Technology Assistance Does Prevention Work for Gay Men? Center for AIDS Prevention Studies, University of California San Francisco, June 1998. Kelly, J.A., St. Lawrence, J.S., Hood, H.V., & Brasfield, T.L. (1989). Compendium* P. 4.59 Valdiserri, R.O., Lyter, D.W., Leviton, L.C., Callahan, C.M., et al. (1989). Compendium* P. 4.60

Health communications / Public information (Programs aimed at changing community norms)	<ul style="list-style-type: none"> Interventions to Prevent HIV Risk Behaviors, National Institutes of Health, Consensus Development Statement, February 11-13, 1997 The Effectiveness Of AIDS Prevention Efforts, Congressional Office of Technology Assistance Does Prevention Work for Gay Men? Center for AIDS Prevention Studies, University of California San Francisco, June 1998. Coates, 1995; Kegeles, Hays, & Coates, in press Kegeles, S.M., Hays, R.B., & Coates, T.J. (1996). Compendium* P. 4.56
Individual-level interventions	<ul style="list-style-type: none"> The Effectiveness Of AIDS Prevention Efforts, Congressional Office of Technology Assistance Does Prevention Work for Gay Men? Center for AIDS Prevention Studies, University of California San Francisco, June 1998.
Outreach	<ul style="list-style-type: none"> Kegeles, S.M., Hays, R.B., & Coates, T.J. (1996). Compendium* P. 4.56 Kelly, J.A., St. Lawrence, J.S., Stevenson, Y., Hauth, A.C., et al. (1992). Compendium* P. 4.58 CDC AIDS Community Demonstration Projects Research Group (1999) Compendium* P. 4.41
AA gay/bisexual men	Source of Information
Group-level interventions	<ul style="list-style-type: none"> Peterson, Coates, Hauck, et al., no date African-American Men's Health Study: Gay and Bisexual Men, 1998
Young gay/bisexual men	Source of Information
Outreach	<ul style="list-style-type: none"> Stall R, Barrett D, Bye L, et al. A comparison of younger and older gay men's HIV risk-taking behaviors: The Communication Technologies 1989 Cross-Sectional Survey. Journal of Acquired Immune Deficiency Syndromes. 1992; 5:682-687. Kegeles, S.M., Hays, R.B., & Coates, T.J. (1996). Compendium* P. 4.56
Group-level interventions	<ul style="list-style-type: none"> Kegeles, S.M., Hays, R.B., & Coates, T.J. (1996). Compendium* P. 4.56
Other (community outreach, community mobilization)	<ul style="list-style-type: none"> Stall R, Barrett D, Bye L, et al. A comparison of younger and older gay men's HIV risk-taking behaviors: The Communication Technologies 1989 Cross-Sectional Survey. Journal of Acquired Immune Deficiency Syndromes. 1992; 5:682-687.

Gay/bisexual Asians & Pacific Islanders	Source of Information
Outreach	<ul style="list-style-type: none"> • Yep GA. HIV/AIDS in Asian and Pacific Islander communities in the US: a review, analysis and integration. International Quarterly of Community Health Education. 1993; 13:293-315. Contact: Gust Yep, (415) 338-2268.
Group-level interventions	<ul style="list-style-type: none"> • Choi K-H, Lew S, Vittinghoff E et al. The efficacy of brief group counseling in HIV risk reduction among homosexual Asian and Pacific Islander men. AIDS. 1996; 10:81-87. Contact: API Wellness Center, Technical Assistance, 415/292-3420 X327.
Gay/bisexual Hispanic/Latino men	Source of Information
Group-level interventions	<ul style="list-style-type: none"> • Assessment of the HIV Prevention Needs of Gay/Bisexual Latino Men in the District of Columbia. Salud, Inc., 1996 • Carballo-Diequez A; Dolezal C. HIV Risk in New York City's Homosexually Active Latin American Men. 1997. • Díaz RM. HIV risk in Latino gay/bisexual men: a review of behavioral research. Report prepared for the National Latino/a Lesbian and Gay Organization. 1995. Contact for Hermanos de Luna y Sol: Jose Ramón Fernández-Peña, Mission Neighborhood Health Center, 415/552-1013 X386.
Heterosexual women	Source of Information
Group-level interventions	<ul style="list-style-type: none"> • Interventions to Prevent HIV Risk Behaviors, National Institutes of Health, Consensus Development Statement, February 11-13, 1997 • The Effectiveness Of AIDS Prevention Efforts, Congressional Office of Technology Assistance • Coley BI, Sikkema KJ, Perry MJ, et al. The role of women as opinion leaders in a community intervention to reduce HIV risk behavior. National Conference on Women and HIV, Pasadena, CA. 1997; Abstract #206.3. Contact: Brenda Coley 414/456-7746 • Collaborative programs in prison HIV prevention. Contact: Barry Zack, Centerforce, Health Programs Division, San Quentin, CA: 415/456-9980. • El-Bassel & Schilling 1992

	<ul style="list-style-type: none"> • Smith, Strand, & Smith, 1994
Outreach	<ul style="list-style-type: none"> • Tross, Abdul-Quader, Simons, et al., 1993
African American women	Source of Information
Outreach	<ul style="list-style-type: none"> • Mackey JL; Wilburn-Sines V. Innovative education techniques targeting African American women. Int Conf AIDS. 1996 Jul 7-12; 11¹: 407 (abstract no. Tu.D.2859). Office of HIV Services, Fairfax, VA. • Lauby, J.L., Smith, P.J., Stark, M., Person, B., & Adams, J. (1998). Compendium* P. 4.53
Group-level interventions	<ul style="list-style-type: none"> • DiClemente, R.J., & Wingood, G.M. (1995). Compendium* P. 4.49 • Hobfoll, S.E., Jackson, A.P., Lavin, J., Britton, P.J., & Shepherd, J.B. (1994). Compendium* P. 4.50 • Kelly, J.A., Murphy, D.A., Washington, C.D., Wilson, T.S., et al., (1994). Compendium* P. 4.52
Health Communications / Public Information	<ul style="list-style-type: none"> • Lauby, J.L., Smith, P.J., Stark, M., Person, B., & Adams, J. (1998). Compendium* P. 4.53
Other (community mobilization)	<ul style="list-style-type: none"> • Lauby, J.L., Smith, P.J., Stark, M., Person, B., & Adams, J. (1998). Compendium* P. 4.53
Hispanic/Latina	Source of Information
Group-level interventions	<ul style="list-style-type: none"> • Marín BV; Gomez CA; Grinstead OA. The gender gap: what young unmarried Latinos think & do about sex. Int Conf AIDS. 1994 Aug 7-12; 10¹: 15 (abstract no. 034D). Ctr. for AIDS Prevention Studies, University of California, San Francisco.
Heterosexual men	Source of Information
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Pregnant women	Source of Information
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Youth	Source of Information
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Hispanic/Latino youth	Source of Information
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Mentally ill	Source of Information
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Sex workers	Source of Information
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Deaf & hard of hearing	Source of Information
Health Communications / Public Information (mass media campaign)	<ul style="list-style-type: none"> • Penarete, D. AIDS prevention program targeting deaf people belonging to the National Institute for the Deaf. Int Conf AIDS. 1996 Jul 7-12;11¹:408 (abstract no. Tu.D.2870 National AIDS Program, Ministry of Health, Bogota, Colombia.

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Incarcerated	Source of Information
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* Compendium refers to the CDC's "Compendium of HIV Prevention Interventions with Evidence of Effectiveness," which starts on **Page 4.60**.

Cost Effectiveness of HIV Prevention Programs

The Centers for Disease Control and Prevention (CDC) encourages HIV prevention community planning groups to consider cost effectiveness in their intervention priority-setting activities. Cost-effectiveness analysis can help decision makers pull together into a single analysis a variety of bits of information about program costs and effectiveness, as well as to confront any uncertainty they might have about programs' costs and consequences. In the past, trying to do this was frustrating because studies specifically on this topic were relatively scarce. Today, however, there are several new studies available on the cost effectiveness of HIV prevention.

Counseling and Testing: An assessment of the economic costs and benefits of CTRPN (Holtgrave et al., 1993) concluded that, "Even under conservative assumptions, the CDC's expenditure on HIV CTRPN services results in a substantial net economic benefit to society." That is, given the projected number of HIV infections that would be prevented by CTRPN, the cost to society of providing the services is less than the savings incurred. This same report, however, points out that this strategy provides more net economic benefits in higher-prevalence populations than in lower-prevalence populations, since a greater number of HIV infections will be prevented by CTRPN in a population with a high prevalence of HIV.

Owens and co-workers¹ evaluated the cost-effectiveness of CDC's recommendation to screen for HIV infection in acute care settings where the seroprevalence of HIV infection is 1 percent or more. When measuring only the costs and benefits associated with the person screened, the cost-effectiveness of screening was \$60,000 per life year saved at 1 percent seroprevalence, and ranged from \$71,000 to \$55,000 per life year saved at 0.5 to 2 percent seroprevalence¹. This cost per life year saved is near the cutoff usually considered cost-effective for screening strategies². These cost-effectiveness ratios appear less favorable than the cost-saving results for publicly funded HIV CTRPN because of the lower HIV seroprevalence of the acute-care settings relative to the CTRPN sites and perhaps different study assumptions and methods.

Partner notification has been shown to be an effective and cost efficient program. HIV partner notification targets persons who have been exposed to HIV. This presents an opportunity to inform persons who are sometimes unaware of their individual risk that they are at risk.

Holtgrave and co-workers conducted a cost-benefit analysis of publicly funded HIV CTRPN programs³. They estimated this program's direct and indirect costs, number of persons served, approximate number of HIV infections averted, monetary benefits to society for each HIV infection averted, and benefit-cost ratios. Under base-case assumptions, the benefit-cost ratio was slightly more than 20 (every dollar invested in HIV CTRPN yielded a \$20 gain), and greater than one for all cases considered (64).

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Group Interventions for Heterosexual Women: A paper published in the American Journal of Public Health that examined the cost effectiveness of a behavioral HIV prevention intervention for at-risk women attending urban primary health care centers. The intervention consisted of five sessions covering basic HIV-related information, condom-use skills training, peer support, self-management, and assertiveness, communications, and negotiation in sexual situations. Clients receiving this intervention used condoms significantly more often than clients not receiving the intervention did.

Although the intervention cost approximately \$260 per client, careful analysis shows that the increases in condom use likely led to a reduction in HIV transmission (and when HIV infections are avoided, medical costs of care and treatment are saved). Therefore, cost-effectiveness analysis shows that even this multi-session intervention appears to be a cost-effective use of resources.

Group Interventions for Gay Men: A community intervention for young gay men in Eugene, Oregon used a variety of social, outreach, and small group activities designed and run by peers to help lower rates of unprotected anal intercourse. ¹ This successful program is estimated to cost about \$11,000 per HIV infection prevented.

At the XI International Conference on AIDS in July, a poster was presented that showed the cost effectiveness of a 12-session behavioral HIV prevention intervention for gay men that included HIV education, condom skills training, and self-management and communications techniques. This intervention cost approximately \$470 per client. However, the intervention led to a significant increase in condom use. Such an increase is very likely to have significantly reduced HIV transmission among intervention clients and their partners, according to epidemiological models. A rigorous analysis shows that the public health benefits of this intervention result in substantial cost savings to society.

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Outreach for Gay Men: These programs are very cost effective when the purposes are limited to the distribution of information to a relatively large number of people and affecting community norms. Outreach is not an effective approach to behavior modification, though it can be the base for such efforts. A program that trained community leaders to deliver AIDS risk-reduction messages to their peers in gay bars resulted in a decrease in unprotected anal sex. ¹ Because the program has relatively low costs, the estimated cost per HIV infection prevented is \$12,000, which is much lower than the \$119,000 lifetime cost of treatment. ²

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Outreach to Injecting Drug Users: Wiebel and colleagues ¹ concluded that street-based outreach services (and use of indigenous outreach workers) were cost-effective alternative interventions for preventing HIV infection among IDUs. They estimated that a street outreach program in the Chicago area prevented 82 new HIV infections among 641 IDUs over a 4-year period, which would have cost more than \$9.7 million to treat from infection to death. Under this program, the cost per individual IDU contact was \$30, and the cost per HIV infection prevented ranged from \$150 to \$300 ¹.

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Prevention Case Management for IDUs: James Kahn, MD, MPH, cites one study that found extensive counseling for IDUs in East Coast cities to be cost effective. The cost per HIV infection averted was estimated to be between \$3,500 and \$4,000, which is substantially less than the estimated costs of medical care for someone with HIV/AIDS.

Counseling and testing, extended counseling and education (after counseling and testing), partner notification, bleach distribution, and treatment of drug dependency for IDUs: One study estimated the cost-effectiveness of these five HIV prevention interventions for IDUs.¹ For each intervention, the cost per adult HIV infection averted was calculated using only the direct costs associated with implementing the intervention in two sample cities in the eastern United States with moderate-to-high HIV risk levels. Cost per adult HIV infection averted for the first four interventions ranged from about \$3,000 to \$32,000 in City A and \$4,000 to \$66,000 in City B, with partner notification being the most expensive. Treatment of drug dependency provided additional HIV-related benefits of \$5,000 to \$7,000 per treatment slot per year¹.

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Partner Counseling and Referral Services: Although the relative investment per person reached might be greater than other public health activities, PCRS is likely to be highly cost-effective. A simple threshold analysis illustrates the probable cost-effectiveness of PCRS to society. Assuming an estimated current \$154,402 lifetime cost in the United States of a person acquiring HIV infection and eventually dying from HIV-related illness (Holtgrave and Pinkerton, 1997) and a conservatively estimated average \$3,205 cost of PCRS to reach one infected person (Toomey *et al.*, 1998).

PCRS must prevent 1 infection out of every 51 HIV-infected partners reached through PCRS to be cost-effective. As PCRS links HIV-infected partners to client-centered counseling and other interventions proven or likely to be effective, this appears to be a threshold relatively easy to achieve by programs. Greater effectiveness, such as preventing only 2-3 infections for every 51 HIV-infected partners reached through PCRS, would convey substantial cost savings to society.

Hotlines: Hotlines are rarely inexpensive to run and maintain particularly when they exist to serve wide geographic regions. On the other hand, their per unit cost is low if volunteers are utilized to provide most of the actual answering of phone lines.¹ While the direct impact of hotlines on averting new HIV infections is uncertain, they are probably cost effective even if they avert only a few infections.

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1. Plan for the Prevention of HIV in Orange County CA, 1996-99, by Nancy H. Corby, Ph.D., and Margaret Schneider Jamner, Ph.D., from the Center for Behavioral Research and Services, California State University, Long Beach.

Perinatal Transmission: Recent findings on the effectiveness of using prenatal, perinatal, and postnatal zidovudine therapy to prevent perinatal HIV transmission led the Public Health Service to recommend routine HIV counseling and voluntary testing for all pregnant women.¹ A paper published in 1999 directly analyzed the cost effectiveness of those recommendations. This analysis found that HIV

counseling and voluntary testing for pregnant women (and zidovudine therapy for those found to be infected with HIV) would actually be cost saving to society.

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Using Theory in HIV Prevention

Center for AIDS Prevention Studies at the University of California San Francisco

Whether or not it is stated, some form of theory is already the basis of prevention interventions. Prevention planners know their populations and have ideas about what determines client behaviors as well as their strengths and needs as individuals and as a community. This hands-on knowledge about what works is informal theory.

Formal theory is made up of principles and methods about prevention and behavior change that have already proven useful in some areas of disease prevention and behavior change. Theories can give HIV program planners a framework for the goals of an intervention, or help explain aspects of risk-taking behavior when working with a new population. Using theories to design HIV prevention interventions can help improve programs, saving valuable time and resources.¹

What are some theories?

Theory is one of many tools that can have an important influence on HIV prevention programs. Some of the most widely known theories are presented below. These theories are not mutually exclusive, but can work together to guide effective programs.

Health Belief Model proposes that an individual's actions are based on beliefs.² It identifies key elements of decision-making such as the person's perception of susceptibility, perceived severity of the illness, and the perceived barriers to prevention.

Theory of Reasoned Action sees intention as the main influence on behavior.³ Intentions are a combination of personal attitudes toward the behavior as well as the opinions of peers, both heavily influenced by the social milieu.

Social Cognitive Theory views learning as a social process influenced by interactions with other people.⁴ In Social Cognitive Theory physical and social environments are influential in reinforcing and shaping the beliefs that determine behavior. A change in any of the three components — behavior, physical or social environments — influences the other two. Self-efficacy, an essential component of the theory, is the person's belief that s/he is capable of performing the new behavior in the proposed situation.

AIDS Risk Reduction Model suggests that in order to change behavior one must first label the behavior as risky, then make a commitment to reduce the behavior, and finally to take action to perform the desired change.⁵ Factors influencing movement between these stages include fear/anxiety and social norms.

Diffusion of Innovation helps understand how new ideas or behaviors are introduced and become accepted by a community. People in the same community adopt new behaviors at different rates and respond to different methods of intervention.⁶

Stages of Change explains the process of behavior change, from not being aware of the negative effects of a behavior, to maintaining safer behaviors.⁷ The five stages are: Precontemplation, Contemplation, Preparation, Action and Maintenance. Different stages exist in the same population. People do not necessarily pass through stages sequentially and may repeat stages.

Harm Reduction accepts that while harmful behaviors exist, the main goal is to reduce their negative effects.⁸ HR examines behaviors and attitudes of the individual to offer ways to decrease the negative consequences of the targeted behavior.

Paulo Freire's ideas on **Popular Education** are based on the belief that teachers and students have different strengths, and should learn reciprocally from each other.⁹ Group discussions examine problems and develop solutions to personally empower people to change their environment, thereby influencing their subsequent actions.

How is theory used in practice?

Just as people draw from a variety of influences for their actions, programs can be designed or modified using relevant parts of different theories.

A school-based program targeting African-American male adolescents in Philadelphia, PA used Reasoned Action and Social Cognitive theories. A five-hour session included discussion, games, role-playing, videos, and other activities. The session targeted self-efficacy through role-playing, and peer norms through a variety of exercises. Follow-up after three months showed less sexual risk-taking and higher maintenance of safer sex intentions since the intervention.¹⁰

Guided by Diffusion of Innovation, one mid-western project used bartenders at gay bars in several medium-sized towns to help identify the most popular people. These people were trained to deliver AIDS risk-reduction messages to their friends and acquaintances in the bars. Patrons encouraged by the role modeling of these popular community members were found to have fewer instances of unsafe sex.¹¹

In a sexually transmitted disease clinic in New York, a video-based educational intervention was planned through the use of the Theory of Reasoned Action and Social Cognitive Theory. The culturally sensitive videos were effective in increasing condom purchases among both men and women and even more effective with the addition of interactive group sessions following the videos (a 74% increase over the control group). The videos targeted norms, attitudes, and behaviors that were reducing the effectiveness of current sexually transmitted disease prevention efforts. The intervention was effective by providing information to overcome barriers to safe sex, discussing issues around condom use, and practicing condom-negotiating skills.¹²

MenTalk, a program for gay men in Oregon, uses a Popular Education approach, gathering groups of gay men and a volunteer facilitator to discuss barriers and solutions to issues about HIV testing, safer-sex and community involvement. The program helped raise consciousness and encouraged the participants to make HIV prevention behavior changes at both the personal and the community level.¹³

Using the Harm Reduction model and the principles of Freirean empowerment, needle exchange programs across the country aim to decrease the transmission of HIV infection in injection drug users. Programs may offer clean needles, bleach, condoms, as well as referrals to treatment programs. By working with clients whether they intend to continue using drugs or not, these programs build trust and assist clients to decrease the risk of HIV infection.¹⁴

A program targeting recently released male and female parolees with a history of drug injection used Social Cognitive Theory to develop an AIDS prevention training. By using ideas of community building, individual responsibility, role models, and job training as

outreach workers, the environment in which behaviors would be determined was modified. After one year, participants had significantly decreased certain sexual and drug risk taking and also improved their adjustment to the community.¹⁵

What needs to be done?

New theories arise from a variety of sources, often from the community that sees the need. Collaborations between service organizations and researchers need to be encouraged, so that programs move beyond learning through word of mouth. A comprehensive HIV prevention strategy uses multiple elements to protect as many of those at risk of HIV infection as possible. Using theory as a framework, planners can take a closer look at what works in prevention and design more effective programs and lay the groundwork for program evaluation. This synthesis can result in more effective programs that better reach people at risk, and can help save time, money and lives.

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The Application of Behavioral Theories in HIV Prevention Settings

2001 San Francisco HIV Prevention Plan

Behavioral theory is a model or framework, developed through multiple observations over time, that depicts and predicts how people behave and that shows how the different factors that influence behavior are linked together.

Behavioral theory can be helpful for developing effective HIV prevention programs. Both informal theories, which providers develop through working with their specific target populations, and formal theories, which have been tested with many different populations, exist. Theories are important for HIV prevention because interventions based on sound theoretical models are the most effective at encouraging behavior change (Valdiserri RO, West GR, Moore M, et al. (1992) Structuring HIV prevention service delivery on the basis of social science theory. *J Commun Health*17(5):259-269.)

This reviews the major tenets of the theories frequently used for HIV prevention and gives examples of their application in an HIV prevention setting.

Guide to Tables in this Section

- **Components.** The principal tenets of the theory.
- **Hypothetical HIV Prevention Example.** An example of how the theory could be applied to understand the HIV prevention needs of an individual or group.
- **Hypothetical Intervention.** An example of an intervention for the individual or group described in the HIV Prevention Example, based on the theory.

GENERAL (NON-HIV-SPECIFIC) BEHAVIORAL THEORIES

DIFFUSION OF INNOVATIONS <i>Oldenburg B, Hardcastle D, Kok G. (1997) Diffusion of innovations. In: Glanz K, Lewis FM, Rimer B, editors. Health Behavior and Health Education: Theory, Research, and Practice. 2 ed. San Francisco: Jossey-Bass.</i>	
Components	Hypothetical HIV Prevention Example
Diffusion: "The process by which an innovation is communicated through certain channels over time among the members of a social system."	Gay men in San Francisco have generally responded positively to interventions in which community leaders introduce an idea or a practice that is then spread throughout the community.
Innovation: "An idea, practice, or object that is perceived as new by an individual or other unit of adoption."	An agency wants to promote a practice among gay men of 100% condom use among HIV-negative bottoms and HIV-positive tops to reduce HIV transmission via anal sex.
Innovators, early adopters, early majority adopters, late majority adopters, and laggards: The five categories of "adopters" according to how long it takes them to accept a new idea or implement a new behavior.	Some HIV-negative bottoms and HIV-positive tops already do this (the innovators) but most use condoms only some of the time (the early adopters, early and late majority adopters, and laggards).
Factors that influence the speed and extent of diffusion: Whether the innovation is better than the behavior or condition it will replace; whether it fits with the target audience's existing values, experiences, and needs; and how much commitment it takes to adopt the innovation.	This practice may not be accepted easily because many men may prefer not to use condoms with some partners, especially if they believe they have the same serostatus as their partner; therefore, the practice is not an improvement on what they are already doing. On the other hand, it may be adopted more quickly, for example, among HIV-positive gay men for whom protecting their partners is highly valued.
Hypothetical Intervention: Using natural opinion leaders, an agency designs a program targeted to the early and late majority adopters, focusing on their motivations for changing behavior (e.g., staying HIV-negative or preventing HIV transmission to another). These opinion leaders talk to other gay men (both HIV negative and HIV-positive) in bars and community settings to promote the practice of 100% condom use and discuss its effectiveness in preventing HIV transmission. The agency maintains this program for two to three years, because changing community norms takes a long time. The agency also uses other strategies to get the message out (e.g., media campaign, street theater).	

EMPOWERMENT EDUCATION THEORY/POPULAR EDUCATION

Freire P. (1970) Pedagogy of the Oppressed. New York: Seabury Press. Horton M, Freire P. (1990) We Make the Road by Walking: Conversations on Education and Social Change. Philadelphia: Temple University Press.

Components	Hypothetical HIV Prevention Example
Popular Education: Interventions based on this theory, developed by Brazilian educator Paulo Freire, use a "problem-posing" and participatory methodology of education with a group of individuals from the target community.	A recent needs assessment in a Latino community revealed the presence of high-risk sexual behaviors, such as low rates of condom use with non-primary partners. A long-standing agency that knows the norms and values of this community wants to develop a program to decrease these behaviors and that addresses the behaviors in their social context. The agency convenes a group to outline the problems and to discuss and address the issues in a participatory process. During this process, the agency acts as the agent of change.
Dialogue: In the dialogue process, everyone participates as "co-learners." People discuss and share their experiences in a group.	The agency facilitates a group discussion about HIV/AIDS and HIV prevention, taking into account what they already know about the community's issues and norms. Individuals in the group discuss the specific HIV-related issues they face and learn from each other's experiences.
Critical Consciousness: Dialogue eventually leads to a process of critical reflection in which people begin to see and understand the social context for their personal problems.	The agency plans regular meetings of the group to continue dialogue about the specific factors that affect risk behavior in their community. As they talk about events and issues in their personal lives, the facilitator helps them see common themes that contribute to HIV risk in their community, such as poverty and lack of access to health and social services.
Praxis: The ultimate goal is praxis, which is the continual interplay of discussion, critical thinking, problem solving, and action to promote individual and community change.	Over time, both the individuals and the group begin to develop a sense of power and control over their own lives. Based on group discussions, the agency develops a community outreach intervention. Some of the group members decide to train to become outreach workers. Other members of the group, as a result of the personal sense of empowerment they feel, begin to be involved in their community in new ways, with the goal of promoting social change.
Hypothetical Intervention: See Hypothetical HIV Prevention Example above.	

HEALTH BELIEF MODEL

Strecher VJ, Rosenstock IM. (1997) The health belief model. In: Glanz K, Lewis FM, Rimer B, editors. Health Behavior and Health Education: Theory, Research, and Practice. 2 ed. San Francisco: Jossey-Bass, p. 41-59.

Components	Hypothetical HIV Prevention Example
Perceived Susceptibility: People are motivated to change behavior when they believe that they are susceptible to the disease.	A woman has a low perceived susceptibility because no one in her social circle talks about HIV or, to her knowledge, has HIV.
Perceived Severity: People are motivated to change behavior when they believe that the disease generally has serious consequences.	She has a high-perceived severity of HIV disease because she reads about HIV-related deaths in the newspaper.
Perceived Benefits: People are motivated to change behavior when they believe that changing the behavior will reduce their risk.	She believes that using condoms will reduce her risk of acquiring HIV.
Perceived Barriers: People are motivated to change behavior when they believe that there are few or no negative consequences (e.g., expensive, dangerous, unpleasant, inconvenient) of changing the behavior.	She is afraid her partner, who has a history of abuse, may accuse her of cheating on him if she asks him to use condoms. Therefore, for her, the benefit of condom use is outweighed by the risk that she may anger her partner.
Cue to Action: A specific stimulus, such as a prevention intervention, is often required to trigger behavior change.	On her way to work every day, she walks by a billboard with an HIV prevention message. She also just heard that her uncle died of HIV 10 years ago, when everyone thought he had died of cancer.
Hypothetical Intervention: Engage the woman in individual counseling, in which the counselor will try to increase the woman's perception of her own risk and susceptibility. The counselor will refer her to domestic violence services and help her learn and practice condom negotiation skills to help her deal with the perceived barriers.	

SOCIAL COGNITIVE THEORY/SOCIAL LEARNING THEORY

Baranowski T, Perry CL, Parcel GS. (1997) How individuals, environments, and health behavior interact: Social cognitive theory. In: Glanz K, Lewis FM, Rimer B, editors. Health Behavior and Health Education: Theory Research and Practice. 2 ed. San Francisco: Jossey-Bass, p. 153-178.

Components	Hypothetical HIV Prevention Example
Environment: Factors external to the person may influence behavior.	A gay man was kicked out of his house by his two homophobic brothers when they learned that he was gay. He moves into a single room occupancy hotel in the Tenderloin. He has no health insurance.
Situation: A person's perception of their environment influences behavior.	He feels that he has no control over his situation - it is the result of how his family has treated him. He sees his peers engaging in commercial sex work for survival and thinks this is his only option.
Behavioral Capability: A person's knowledge and skills to perform a behavior influence whether a person engages in a behavior.	He knows how to use condoms but is not very skilled at talking to his partners/clients about using them.
Outcome Expectations/Expectancies: A person expects certain results from engaging in a particular behavior and places a certain value on the results, and these factors affect their behavior.	He expects that using condoms will prevent him from getting HIV, and this is a highly desirable outcome for him.
Self-efficacy: A person's confidence in performing the behavior affects whether they will engage in the behavior.	He is not very confident that he can get a partner/client to use a condom.
Observational Learning: A person acquires new behaviors from watching the actions of others and observing the results.	Because sex is usually a private act, he does not get to observe how other people negotiate condom use.
Reciprocal Determinism: The interaction of the person, the behavior, and the environment in which the behavior is performed affects a person's behavior.	All the above factors combined affect the man's ability to reduce his risk for HIV. If one of the factors changes, it may result in changes in the other factors.
Hypothetical Intervention: Start a multiple session group workshop at a single room occupancy hotel in the Tenderloin and enroll the man. The group works on changing their perceptions of the environment, so that they feel empowered, and increasing self-efficacy to use condoms in survival sex situations. They will also spend a lot of time on role-playing how to negotiate condom use in different kinds of situations. The group leader or someone at the agency will also refer the man to housing services and enroll him in MediCal.	

SOCIAL NETWORKS/SOCIAL SUPPORT/PEER SUPPORT THEORIES	
Wohlfeiler D. (1997) Community organization and community building among gay and bisexual men. In: Minkler M, editor. Community Organizing and Community Building for Health. New Brunswick: Rutgers University Press.	
Components	Hypothetical HIV Prevention Example
Social Networks: "Social networks" refers to the density, complexity, size, and other characteristics of a social group, and they are related to health and well-being.	An adult female alcoholic's social and family networks are unsupportive of her abstinence from drinking, which has been associated with unsafe sexual behavior in her past. She lives with her husband and her sisters, all of who drink regularly. Her social life revolves around going to bars with her friends. She does not receive strong social support from her family and peers. Her husband is emotionally abusive, and her friends do not support her in her attempts to quit drinking.
Social Support: "Social support" refers to the positive emotional and practical products that people derive from their social networks, and it is related to health and well-being.	
Peer Support: "Peer support" refers to the social support received from peers (people with whom a person identifies because of similar age, race/ethnicity, culture, or other aspects of identity), and it is related to health and well-being.	
Hypothetical Intervention: A case worker conducts an assessment with her client and they agree that her social networks and overall social environment are unhealthy. The case worker refers her to a multiple session group workshop for female substance users focusing on HIV risk reduction. After going to the workshop, the client decides to participate in Alcoholics Anonymous (AA) to develop, promote, and increase her social networks that are supportive for healthy behavior. AA and the workshop provide her with a sense of belonging, opportunities for nurturance, reassurance of worth, guidance and advice in uncertain and adverse circumstances, and access to new and diverse information. In addition to emotional support and encouragement, the case worker helps her get access to health care and other practical needs.	

STAGES OF BEHAVIOR CHANGE MODEL

Prochaska JO, Redding CA, Evers KE. (1997) The transtheoretical model and stages of change. In: Glanz K, Lewis FM, Rimer B, editors. Health Behavior and Health Education: Theory, Research, and Practice. 2 ed. San Francisco: Jossey-Bass, p. 60-84.

Components	Hypothetical HIV Prevention Example
Precontemplation: A person has no intention of changing a behavior within the near future.	A male-to-female transgendered injection drug user shares needles with her friends and has no plans to stop sharing.
Contemplation: A person intends to change a behavior within the near future.	A few months later, she has thought about not sharing needles with her friends because she just heard about someone who got HIV that way.
Preparation: A person has begun to take a few steps toward changing a behavior.	A few months later, she starts to ask around about needle exchange.
Action: A person has made changes in a behavior.	She starts going to needle exchange regularly and has stopped sharing needles with friends.
Maintenance: A person is able to continue the new behavior for an extended period of time.	She hasn't shared needles for 8 months.
Pros and Cons: For people to move from one stage to the next, either the pros of changing the behavior must increase and/or the cons of changing the behavior must decrease.	Her case manager helped to move her along the stages of change by talking with her regularly about the pros and cons of sharing needles.
Hypothetical Intervention: A prevention case manager assesses the transgendered woman on intake and finds that she is in the contemplation stage and is thinking about not sharing needles anymore. The case manager works with her to move her toward preparation, action, and finally maintenance by emphasizing the pros of changing the behavior (e.g., HIV is highly transmissible via shared needles, so eliminating sharing will reduce her risk greatly) and reducing the cons (e.g., her perception is that needle exchange is time consuming, but the case manager points out that needle exchange is right around the corner and it is quick and easy). She also teaches her how to clean needles properly and watches her practice this skill. During the maintenance phase, the case manager uses relapse prevention techniques.	

THEORY OF REASONED ACTION

Montano DE, Kasprzyk D, Taplin SH. (1997) The theory of reasoned action and the theory of planned behavior. In: Glanz K, Lewis FM, Rimer B, editors. Health Behavior and Health Education: Theory, Research, and Practice. 2 ed. San Francisco: Jossey- Bass, p. 85-112.

Components	Hypothetical HIV Prevention Example
Behavioral Intention: Whether a person intends to perform a behavior is the most important predictor of actual behavior.	Many adolescents do not intend to use condoms with their partners.
Attitude: A person's beliefs and values about the behavior determine his or her attitude about the behavior, and attitude affects behavioral intention.	They don't believe that using condoms will completely prevent them from acquiring or transmitting HIV or other STDs, but they place a high value on this result.
Subjective Norm: A person's perception of whether important individuals (e.g., peers) approve or disapprove of the behavior and whether he or she is motivated to act according to those people's opinions determine his or her subjective norm, and subjective norm affects behavioral intention.	They think that other people their age don't generally view condom use in a positive light, and so they are hesitant to discuss condoms with their partners.
Hypothetical Intervention: In a group outreach theater intervention, the youth actors play out a scene in which they talk about the effectiveness of condoms (to change attitudes) and emphasize that condoms can be a fun part of sex (to change subjective norms). They hand out colored condoms at the end of the skit.	

SOCIAL MARKETING THEORY

Kotler P. (1982) Marketing for Nonprofit Organizations. Englewood Cliffs: Prentice-Hall.

Social marketing as a behavior theory applies the concepts of traditional marketing to the "sale" or promotion of healthy behaviors (i.e., the product) to the target group (i.e., the consumer). See the Strategies section of this chapter for use of social marketing as a strategy.

HARM REDUCTION THEORY

Brette RP. (1991) HIV and harm reduction for injection drug users. AIDS 5:125-136.

Harm reduction theory acknowledges that harmful behavior exists and focuses on the goal of reducing the negative effects of the harmful behavior. It focuses on the attitudes and behaviors of the individual to determine the best ways to decrease the negative effects of the behavior. See the Strategies section of this chapter for use of harm reduction as a strategy.

HIV-SPECIFIC BEHAVIORAL THEORIES

AFRICAN CENTERED BEHAVIOR CHANGE MODEL

(Institute for the Advanced Study on Black Family Life and Culture and the Association of Black Psychologists; Nobles and Goddard, undated report)

This theory posits that in order for African-American people to lead healthy lifestyles and change high-risk behavior, they need to know who they are culturally, know their history, and understand the destructive influence of the Maafa, which is the continuous process that supports white supremacy and that is "designed to dehumanize and destroy African people." This model sees two principles as the foundation for changing health beliefs and practices: "The first is an awareness and actualization of the culturally bound history and foundations of the health-related philosophies, traditions, and values of people of African ancestry. The second is an awareness that African Americans' 'anti-healthy' HIV/AIDS/STD-related behaviors are the result of and consistent with historic and alien forces of dehumanization, disintegration, and disease." One way in which this model could be used in HIV prevention is to integrate Afrocentric thought and principles, such as the Nguzo Saba (the seven principles of Kwanzaa), into intervention curriculums, celebrations, and décor. For further information on this model, contact the Institute for the Advanced Study on Black Family Life and Culture, Oakland, CA at (510) 836-3245. For training on this model, contact Denise Giusti-Bradford, San Diego, CA at (619) 582-7149.

AIDS RISK REDUCTION MODEL

Catania JA, Kegeles SM, Coates TJ. (1990) Towards an understanding of risk behavior: An AIDS risk reduction model. Health Educ Q 17:53-72.

Components	Hypothetical HIV Prevention Example
Labeling: A person must consciously identify a sexual behavior as high risk for contracting HIV before they will consider any change.	A male teenager has multiple partners and he does not use condoms consistently. However, he has never acquired an STD or HIV, so he does not perceive this behavior as risky.
Commitment: A person must commit to reducing high-risk sexual behavior and/or increase low-risk sexual behavior in order to carry out that change.	He is not committed to using condoms all the time because he thinks sex feels better when he doesn't use condoms.
Enactment: Seeking and enacting strategies to achieve the behavior change goals constitute enactment.	Because he has not committed to using condoms all the time, he has not yet sought information about how to get cheap or free condoms or talked to any friends or trusted adults about sex and condoms.
Hypothetical Intervention: Enroll him in a group workshop with other male teenagers that focuses on increasing perception of risk, emphasizing commitment to safer sex behavior change, increasing self-esteem, enhancing communication skills, and developing and maintaining supportive social networks. Discussions in the group might revolve around changing the perception that no one in their social circles uses condoms, why it is difficult to use condoms every time, what would help make it easier, and practicing the skills needed to make it easier to use condoms every time. To facilitate behavior change, the agency provides free condoms.	

IMB (INFORMATION, MOTIVATION, BEHAVIORAL SKILLS) MODEL <i>Fisher JD, Fisher WA. (1992) Changing AIDS-risk behavior. Psychol Bull 111(3):455-474.</i>	
Components	<i>Hypothetical HIV Prevention Example</i>
Information: People need information regarding HIV transmission and prevention in order to reduce their risk for HIV.	A male IDU knows a lot about how HIV can be transmitted through sharing needles and how to protect himself from getting HIV. He knows how to clean needles properly and where to go for needle exchange.
Motivation: How motivated a person is to change HIV risk behaviors affects whether they act on the information they receive.	He is not motivated to stop sharing needles because in the moment that he needs a fix, HIV doesn't seem that important, and he only shares with people who say they are HIV-negative.
Behavioral Skills: The necessary skills to perform the behavior must be present in conjunction with information and motivation for behavior change to occur.	He is skilled at cleaning his works, but he might benefit from practicing how to avoid getting into situations where his only option for shooting up is with a used, non-sterilized needle.
Hypothetical Intervention: Enroll the man in a prevention case management program that uses a harm reduction approach. The case manager and the man develop an individualized prevention plan that includes finding ways to maximize his use of needle exchange, increasing condom use, and practicing skills to avoid situations that could lead to unsafe behavior. The case manager also explores his lack of motivation to change behavior and attempts to increase his motivation over time. The case manager refers him to drug treatment and mental health services as appropriate, as well as assists him to enroll in support groups and workshops that will help him maintain his risk reduction.	

